

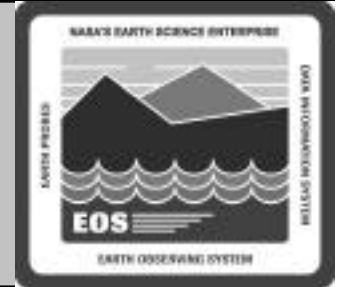
ASTER GDS Interoperability

Guy Swope

Raytheon Raytheon Systems Company

704-CD-510-001

Requirements Summary



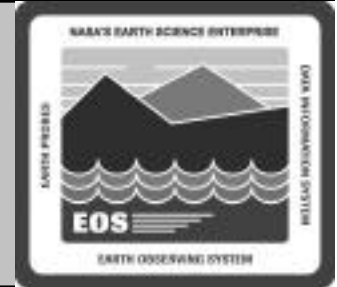
ECS ASTER Gateway supports two-way interoperability between ECS and the ASTER Ground Data System.

- **ECS shall provide an interface to ASTER GDS to support ECS users**
- **ECS shall provide an interface to ECS to support ASTER GDS users**

GDS to ECS Operability Includes

- **Directory Searches**
- **Inventory Searches**
- **Browse**
 - **Including Integrated Browse**

Requirements Summary cont'd



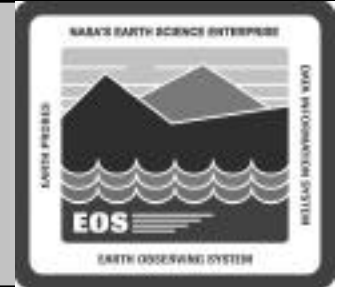
GDS to ECS Operability Also Includes

- **Price Estimates**
 - Only for Landsat 7 Level 0R WRS (Fixed Scene) datasets
- **Orders**
- **Order Status**

GDS to ECS Operability Does Not Include

- **ASTER On-Demand Processing**
- **Landsat 7 0R Floating (partial subinterval) scene**
 - Pricing
 - Orders

Requirements Summary cont'd



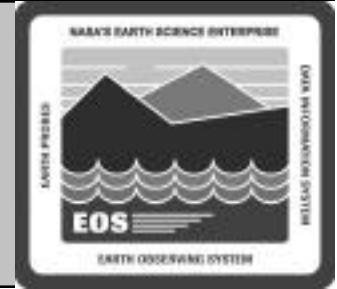
ECS to GDS Operability Includes

- **Directory Search**
 - Via the same GCMD mechanism as V0
- **Inventory Search**
- **Browse**
 - Including Integrated Browse
- **Orders**

Data Dictionary Maintenance Tool Shall Support

- **Import of ASTER GDS dataset valids**
- **Export of ECS dataset valids**

Key Design Drivers



ASTER Interoperability needed to support GDS user access to ECS data holdings

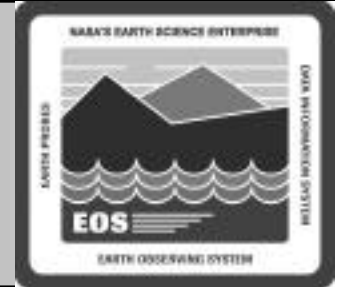
- Includes access to holdings at all ECS DAACs
- Requires cross-DAAC search and order requests

ASTER Interoperability needed to support ECS user access to GDS data holdings

- Access using same ECS client (EOS Data Gateway)
 - Requires valid exchange between ECS and ASTER GDS
- Support for ASTER On-Demand Processing

Extend/Modify V0 protocol to support new GDS requests, ASTER On-Demand processing

New HW/SW Components



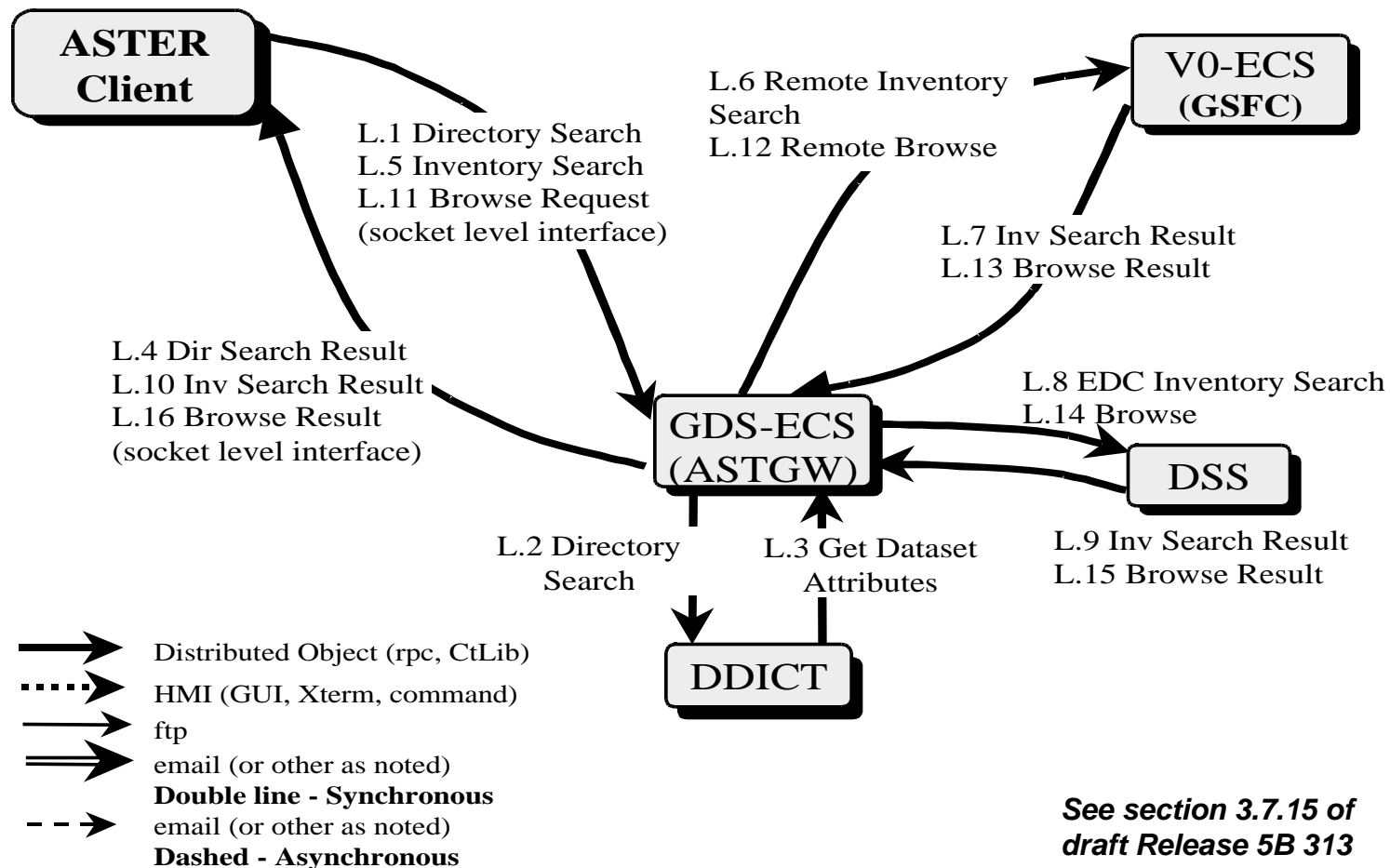
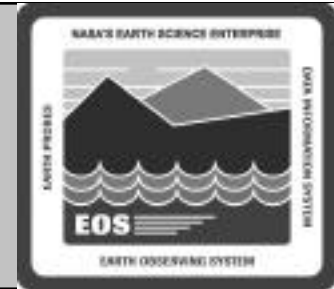
ASTGW - New CSCI in Data Management Subsystem

- **Provides two new servers**
 - **GDS to ECS Gateway**
 - Handles request from GDS users
 - Provides the access to ECS data holdings
 - **ECS to GDS Gateway**
 - Handles requests from ECS users
 - Provides the access to GDS data holdings
- **Resides with other Data Management Subsystem applications on INTHW CI (x0ins01, x0ins02)**
- **Reside only at the EDC DAAC**

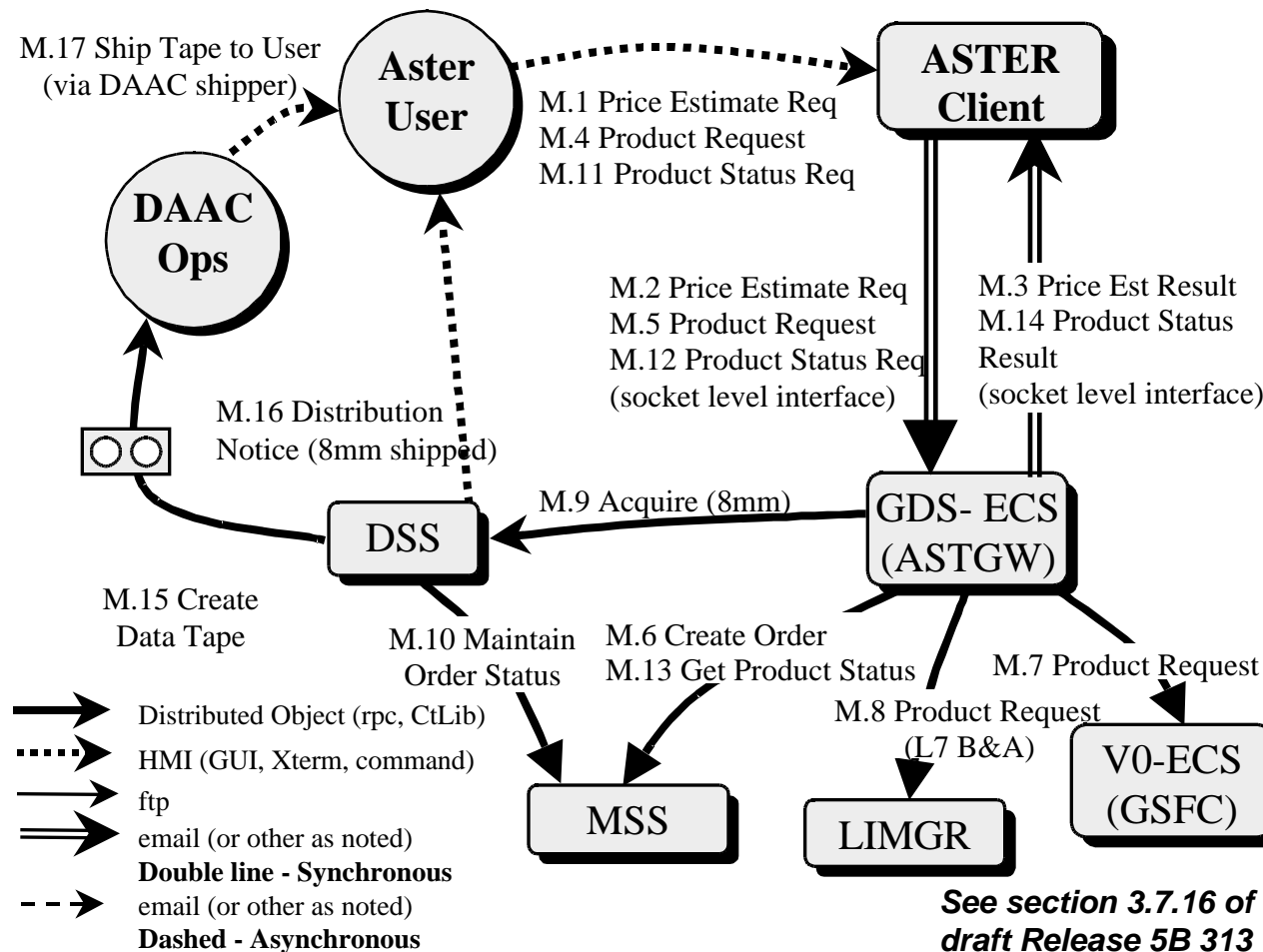
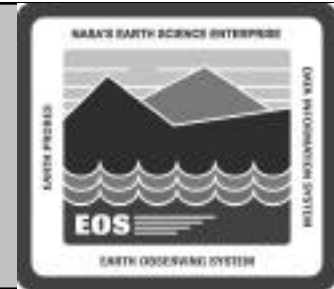
Modifications to existing SW components

- **Data Dictionary Maintenance Tool**
 - **Modified to map ASTER valids to ECS valids and vice versa**
 - **Modified to import GDS and export ECS valids information**

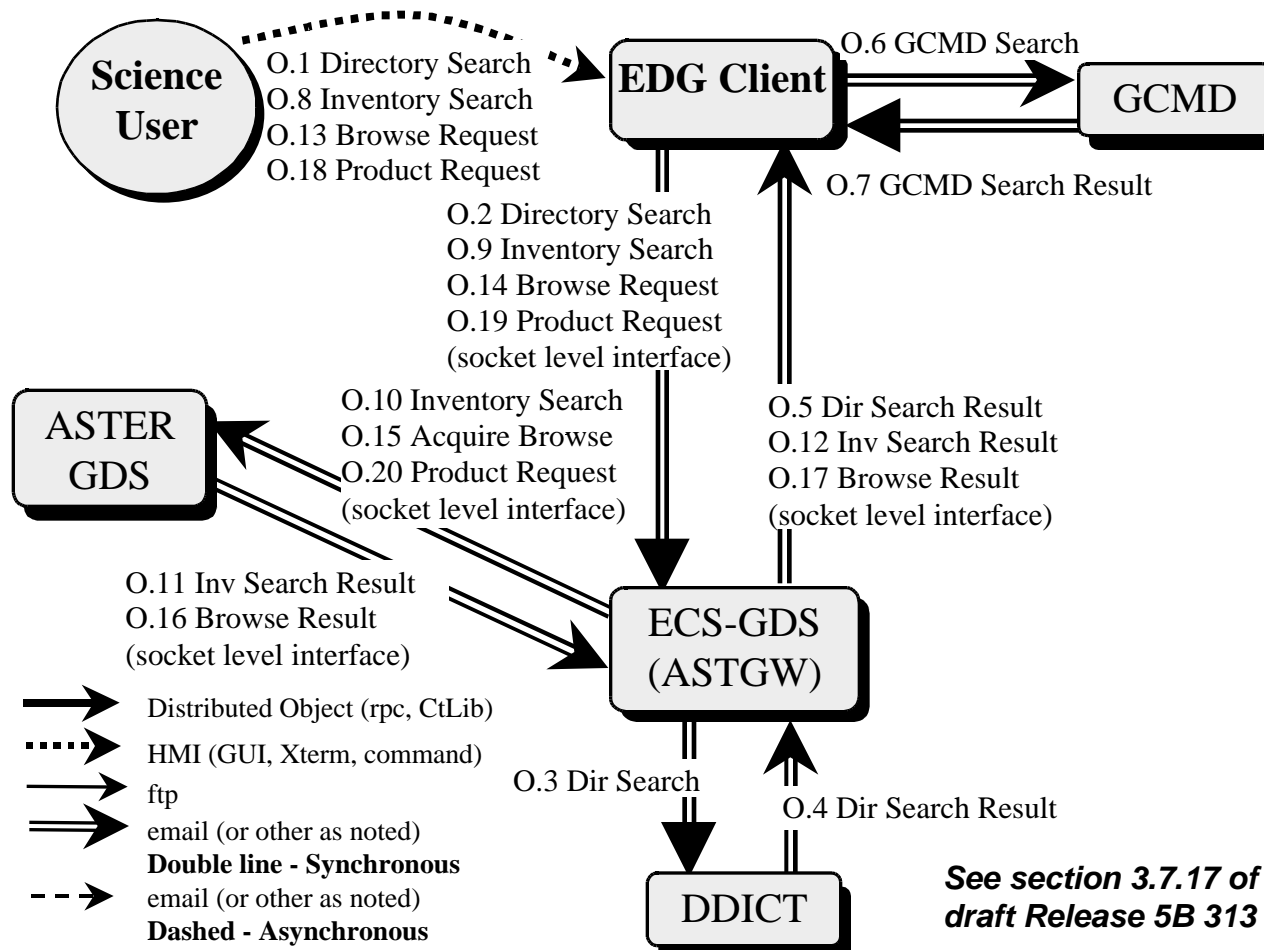
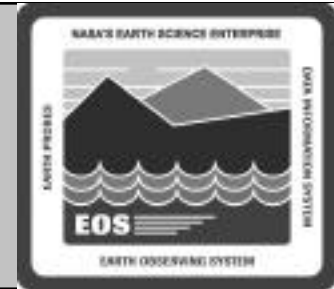
ASTER GDS User Scenario - Search and Browse



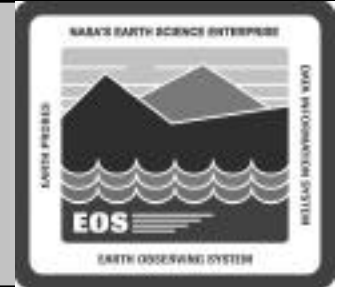
ASTER GDS User Scenario - Price, Order and Order Status



ECS User Search, Browse and Order of ASTER GDS Data



Operational Impacts



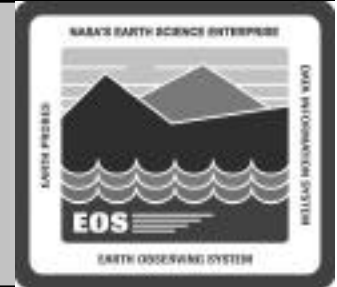
Valids Exchange

- Each DAAC will need to periodically export their ECS collections to ASTER GDS
- EDC DAAC operators will need to periodically import ASTER collections from the ASTER GDS
- EDC DAAC operators will need to periodically import ECS collections in GDS Valids format from other ECS DAACs
 - Needed for cross-DAAC search, browse and order

Two additional sets of configuration parameters for each server including

- Landsat 7 WRS fixed scene price
- Media distribution options

Operational Impacts cont'd



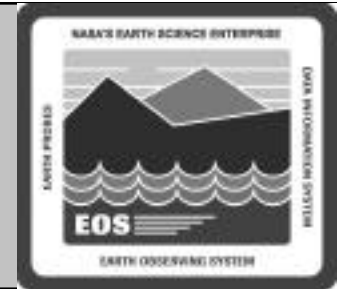
EDC User Services

- **EDC User Services will be point of contact for order status info from GDS users**
 - Typically only for failures since automated status exists
- **EDC User Services will be point of contact for ECS orders of GDS data**
 - Will be able to match up ECS Order ID with ASTER Order ID to query ASTER GDS for status

The EOS logo is a square graphic with a thick black border. Inside, the text "NABA'S EARTH SCIENCE ENTERPRISE" is at the top. The center features a stylized landscape with two mountains and wavy lines representing water. The letters "EOS" are prominently displayed in the foreground. The bottom text reads "EARTH OBSERVING SYSTEM". On the left side, "EARTH PROBLEMS" is written vertically, and on the right side, "DATA INFORMATION SYSTEM" is written vertically.



Data Dictionary Maintenance Tool Import Validates Modified Interface



VC Data Dictionary Maintenance Tool

File Selected Edit Help

Read File Read Valid File Write Valid File Create Multiple Collection Release Collection

◇ Import ECS Valid ◇ Import GDS Valid

Valid File: or

Check File System

Input Error

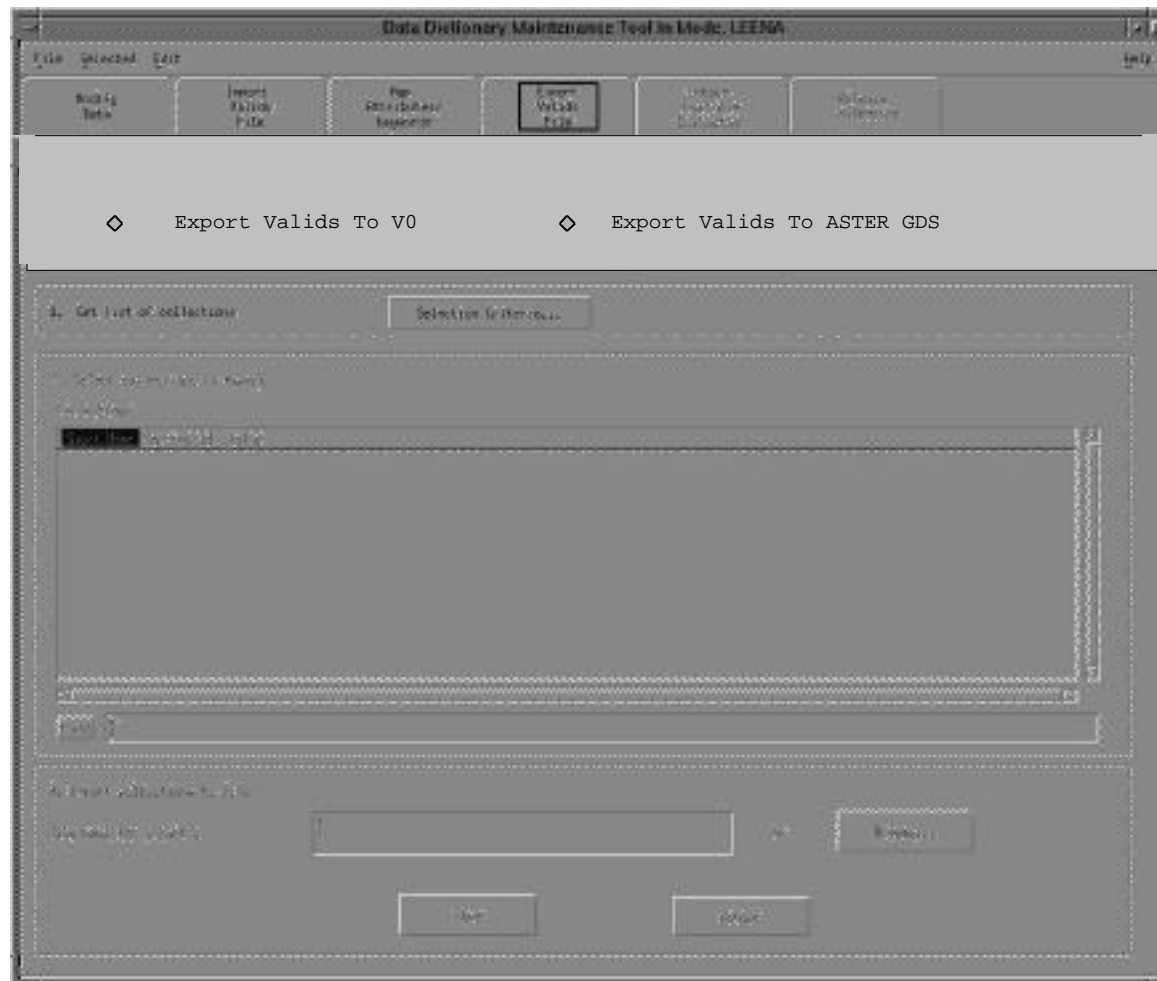
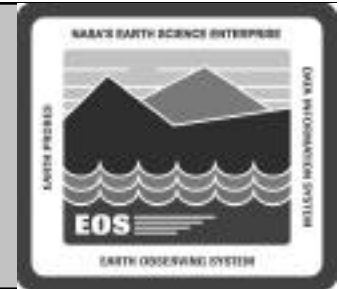
Available Sources

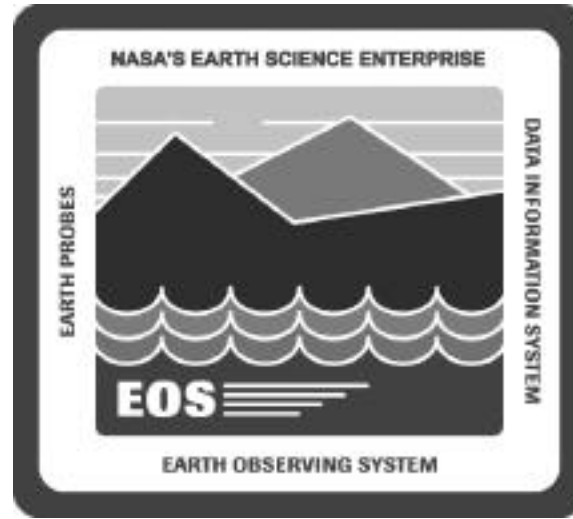
Error File: or

Save Error File

Send changes to Data Dictionary and metadata

Data Dictionary Maintenance Tool Export Validates Modified Interface





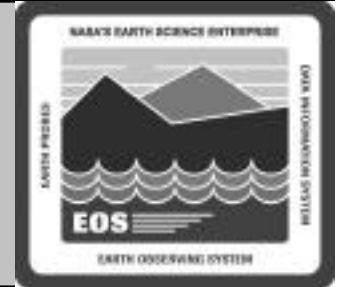
Java DAR Tool (JDT) Update

Mark Pelletier

Raytheon Raytheon Systems Company

704-CD-510-001

Java DAR Tool Background



What is a DAR?

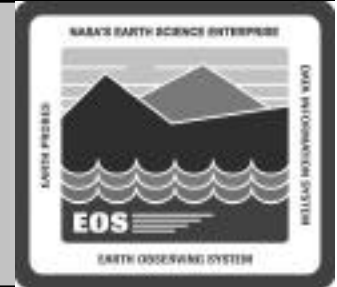
- A Data Acquisition Request, specifically one generated by this tool.

Existing tool can create, submit, modify, copy, delete, rename DARs

What is a xAR?

- Any pre-existing data acquisition requests.
- DARs xARS

Requirements Summary



Search

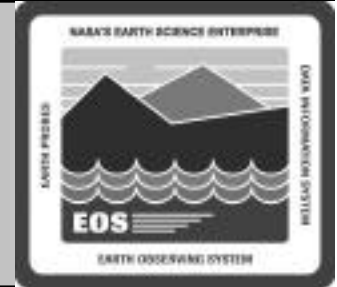
- **Select Area of Search (AOS) -- either graphically or textually**
- **Select temporal parameters**
- **Select additional search parameters**
- **Save/Restore/Delete/Copy search criteria.**

Query Status of search

Results

- **View Results -- display graphically or textually**
- **Show Areas of Interest (AOI) within AOS**
- **Show Observed Scenes within AOI**
- **Save/Restore/Delete/Copy results.**

Key Design Drivers



Web-Based

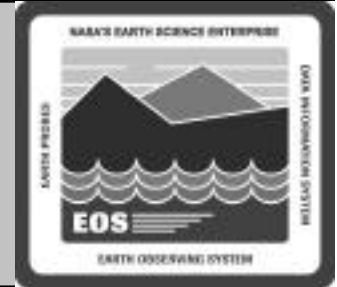
- Run on PC and UNIX
- Java-based tool

User Centered Design

- User Input
- ASTER Science Team Contributed to Gui

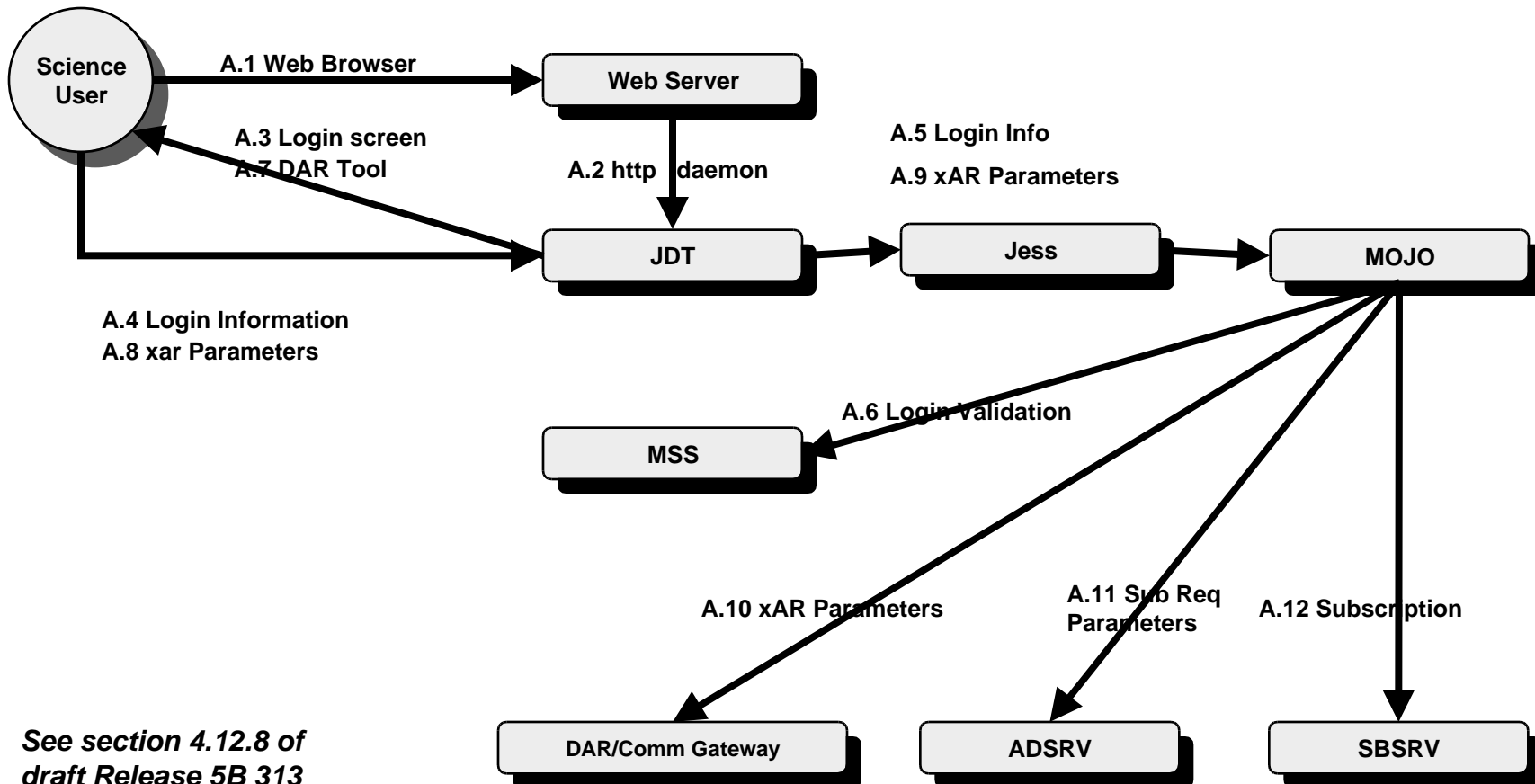
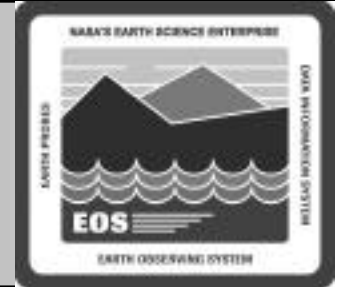
Conformance with ASTER GDS API

New SW Components

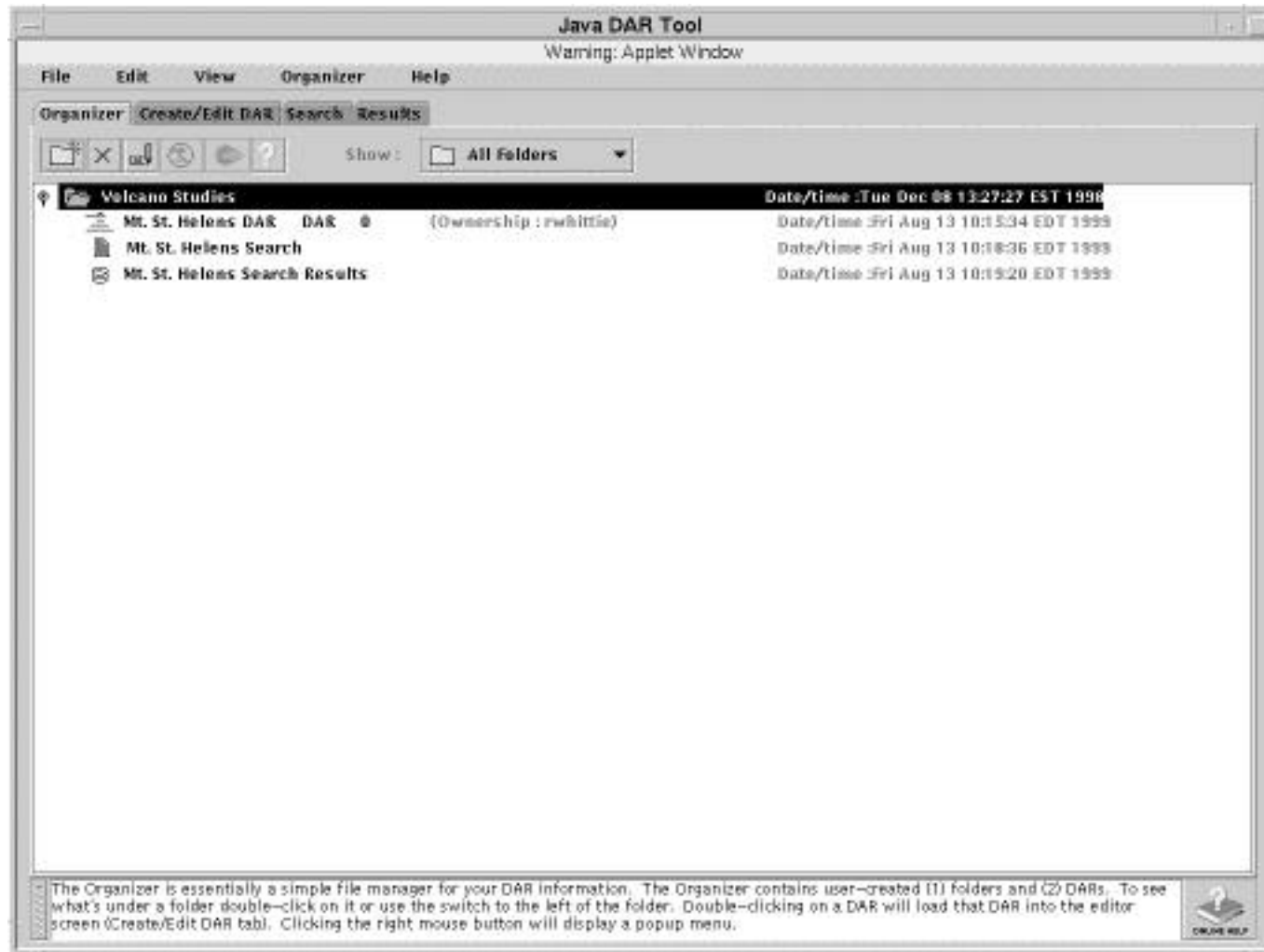
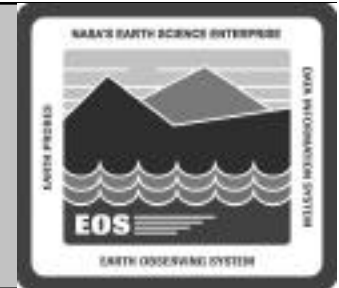


Added tabs to Java DAR tool to search for xARs and retrieve results.

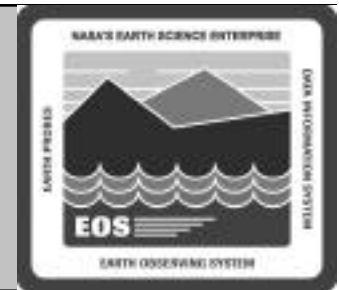
ASTER Search Interaction Diagram



JDAR Tool (JDAR) Organizer Tab



Java DARTOOL General Search Tab (new)



Java DARTOOL

Warning: Applet Window

File Edit View Search Help

Organizer Create/Edit DAR Search Results

Submit Search

General **Pos_Spatial** Temporal Coverage Geometry Priority Dar ID Search

DAR Title:
(exact match required) Any

DAR Type: Any

User ID:
(entry required if DAR Type = Requestor's DAR) Any

Investigation Class: Any

DAR Status: Any

Maximum Cloud Coverage(%): <=100%

Minimum Cloud Coverage(%): <=5%

Day and/or Night Settings: Any

Telescope Selection: Any

Note: Press button to save values >>> Update Search >>>

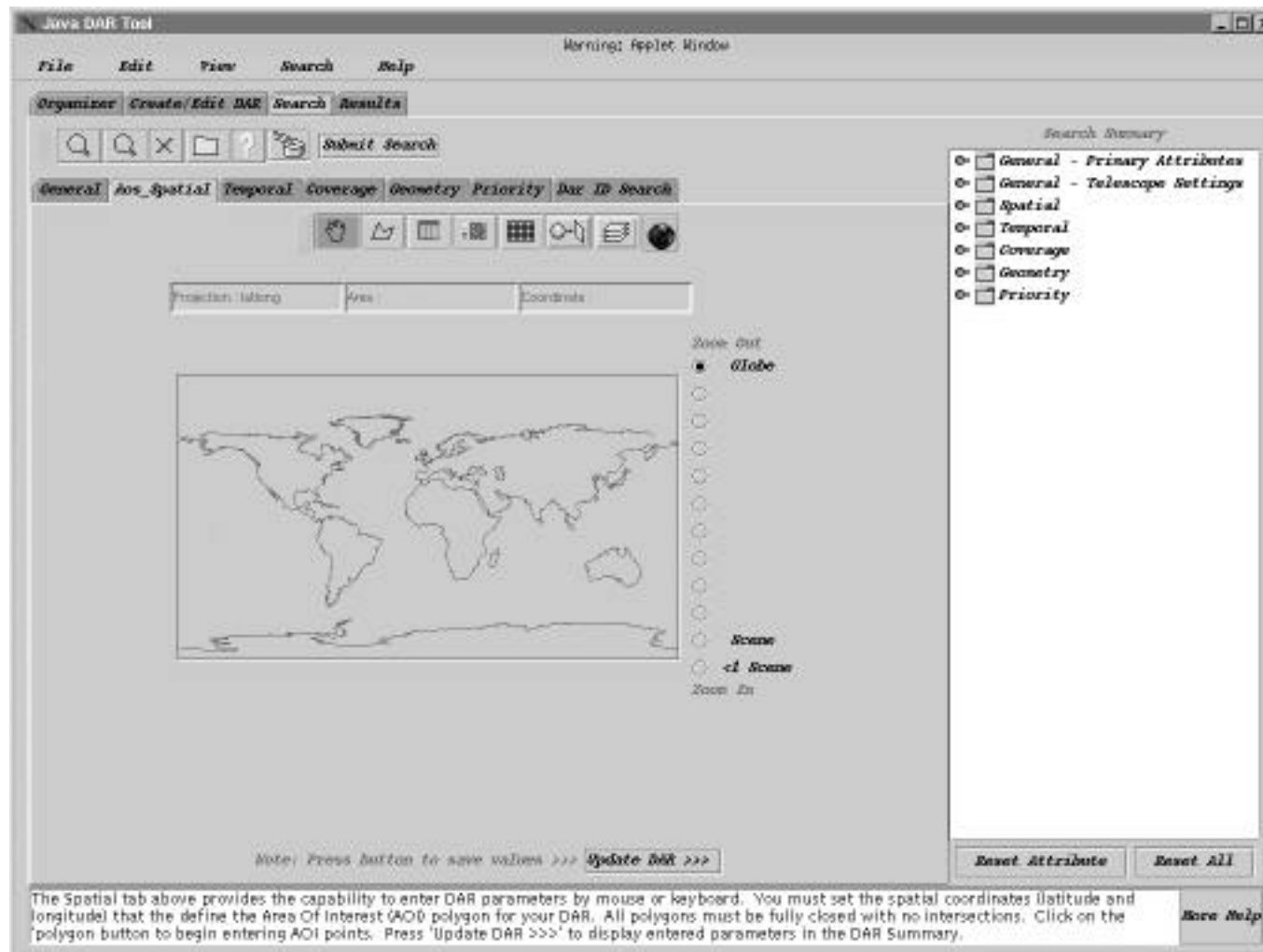
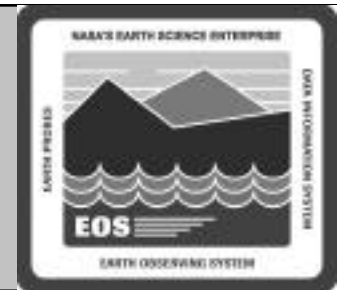
Search Summary

- ☐ General - Primary Attributes
- ☐ General - Telescope Settings
- ☐ Spatial
- ☐ Temporal
- ☐ Coverage
- ☐ Geometry
- ☐ Priority

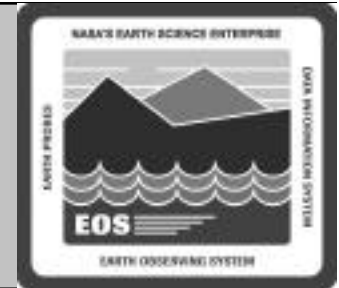
Export Attribute Export All More Help

Developers who are interested in displaying instruction-level help for the screen << jdt.client.search.SearchScreen >> must implement the jdt.aux.utilities.IComponentSupport and set the componentID

Java DAR Tool Search AOS Tab (new)



Java DAR Tool Search Temporal Tab (new)



Java DAR Tool

Warning: Applet Window

File Edit View Search Help

Organizer Create/Edit DAR Search Results

Submit Search

General **As Spatial** Temporal Coverage Geometry Priority Dar ID Search

Search Date Range Settings

Start Date: 7 21 1999
Month/Day/Year

End Date: 7 22 1999
Month/Day/Year

Note: Press button to save values >>> Update Search >>>

Search Summary

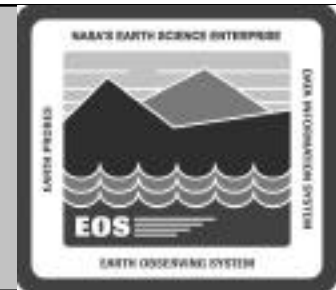
- ☐ General - Primary Attributes
- ☐ General - Telescope Settings
- ☐ Spatial
- ☐ Temporal
- ☐ Coverage
- ☐ Geometry
- ☐ Priority

Event Attribute Event All

Developers who are interested in displaying instruction-level help for the screen << jdtclient.search.TemporalScreen >> must implement the jdt.aus.utilities.IComponentSupport and set the componentID

More Help

Java DAR Tool Search Coverage Tab (new)



Java DAR Tool

Warning: Applet Window

File Edit View Search Help

Organizer Create/Edit DAR Search Results

Submit Search

General **Geo Spatial** Temporal Coverage Geometry Priority Dar ID Search

Coverage Method: Any

Coverage Percent (%): [-999 means 'Any'] [0 100] Any

Full Duration Observation Across All Required: Yes No Any

Allow Cross Track Fragmentation: Yes No Any

Note: Press button to save values >>> Update Search >>>

Export Attributes Export All

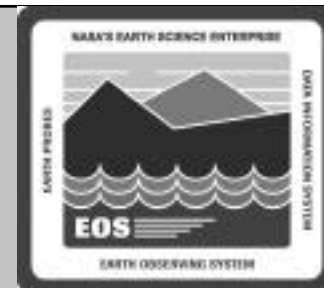
More Help

Search Summary

- ☐ General - Primary Attributes
- ☐ General - Telescope Settings
- ☐ Spatial
- ☐ Temporal
- ☐ Coverage
- ☐ Geometry
- ☐ Priority

Developers who are interested in displaying instruction-level help for the screen << jdtclientsearch.CoverageDetailsScreen >> must implement the jdt.aux.utilities.IComponentSupport and set the componentID

Java DAR Tool Search Geometry Tab (new)



Java DAR Tool

Warning: Applet Window

File Edit View Search Help

Organizer Create/Edit DAR Search Results

Submit Search

General Arc_Spatial Temporal Coverage **Geometry** Priority Dar ID Search

Maximum Run Angle: (-999.0 means 'Any') -999.0 ☒ Any

Minimum Run Angle: (-999.0 means 'Any') -999.0 ☒ Any

Specific Look Angle Flag: ☐ Yes ☐ No ☒ Any

Maximum Look Angle: 8.55

Minimum Look Angle: 0.0

Specific Look Angle: (-999.0 means 'Any') -999.0 ☒ Any

Prevent Look Angle Flag: ☐ Yes ☐ No ☒ Any

Prevent Look Angle: (-999.0 means 'Any') -999.0 ☒ Any

Note: Press button to save values >>> Update Search >>>

Search Summary

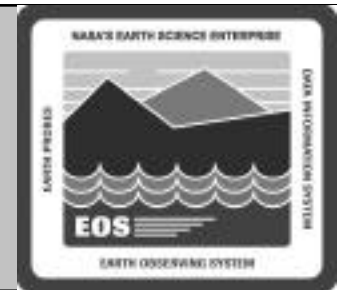
- ☐ General - Primary Attributes
- ☐ General - Telescope Settings
- ☐ Spatial
- ☐ Temporal
- ☐ Coverage
- ☒ Geometry
- ☐ Priority

Event Attributes Event All

More Help

Developers who are interested in displaying instruction-level help for the screen << jdtclientsearch.ViewingGeometryScreen >> must implement the jdt.aux.utilities.IComponentSupport and set the componentID

Java DAR Tool Search Priority Tab (new)



Java DAR Tool

Warning! Applet Window

File Edit View Search Help

Organizer Create/Edit DAR Search Results

Submit Search

General As_Spatial Temporal Coverage Geometry Priority **Dar ID Search**

Search Summary

- ☐ General - Primary Attributes
- ☐ General - Telescope Settings
- ☐ Spatial
- ☐ Temporal
- ☐ Coverage
- ☐ Geometry
- ☐ Priority

Desired Campaign: ☐ Yes ☐ No ☒ Any

Implementation Urgency: ☐ Normal ☐ Urgency ☒ Any

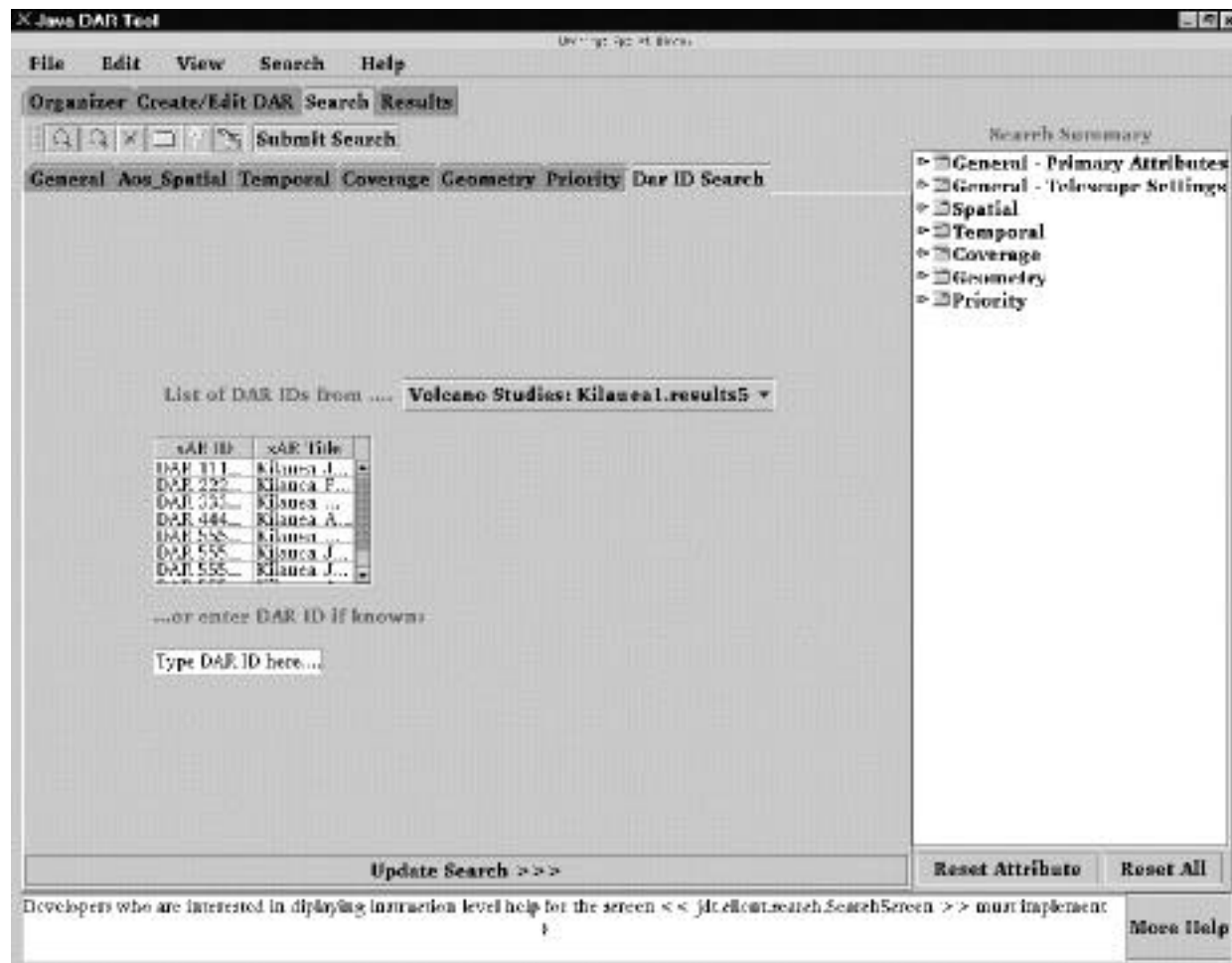
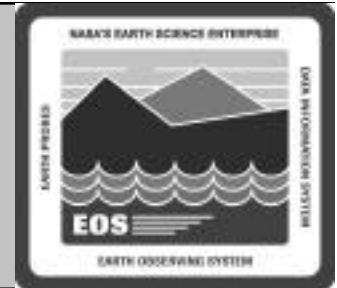
Request for Expedited Data: ☐ Yes ☐ No ☒ Any

Enter Press button to save values >>>

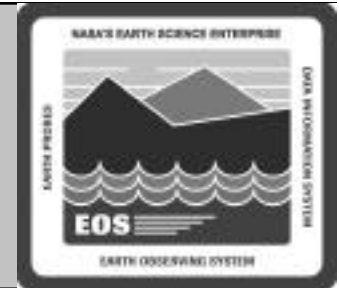
Developers who are interested in displaying instruction-level help for the screen << jdtclient.search.SpecialRequestScreen >> must implement the jdt.aui.utilities.IComponentSupport and set the componentID

[More Help](#)

DAR ID Search Tab (new)



Search Results Tab (new)



ANYAPP
Warning: Applet Window

File Edit View Search Results Help

Organizer Create/Edit DAG Search Results

Row	NAS ...	NAS ID	EOS Status	Primary Attributes	Temporal Sorting	Coverage Details...	Multiple Observa...	Coverage Method	Minimum Sample L...	Maximum Sample L...	Number of Sample...
0	10_TITLE	10					Yes	Sampled	1	99	
1	11_TITLE	11					Yes	Sampled	1	99	
2	12_TITLE	12					Yes	Sampled	1	99	
3	13_TITLE	13					Yes	Sampled	1	99	
4	14_TITLE	14					Yes	Sampled	1	99	
5	15_TITLE	15					Yes	Sampled	1	99	
6	16_TITLE	16					Yes	Sampled	1	99	
7	17_TITLE	17					Yes	Sampled	1	99	
8	18_TITLE	18					Yes	Sampled	1	99	
9	19_TITLE	19					Yes	Sampled	1	99	
10	20_TITLE	20					Yes	Sampled	1	99	
11	21_TITLE	21					Yes	Sampled	1	99	
12	22_TITLE	22					Yes	Sampled	1	99	
13	23_TITLE	23					Yes	Sampled	1	99	
14	24_TITLE	24					Yes	Sampled	1	99	
15	25_TITLE	25					Yes	Sampled	1	99	
16	26_TITLE	26					Yes	Sampled	1	99	

ANY Medics / ANY Search Results

None Medics

NASA'S EARTH SCIENCE ENTERPRISE

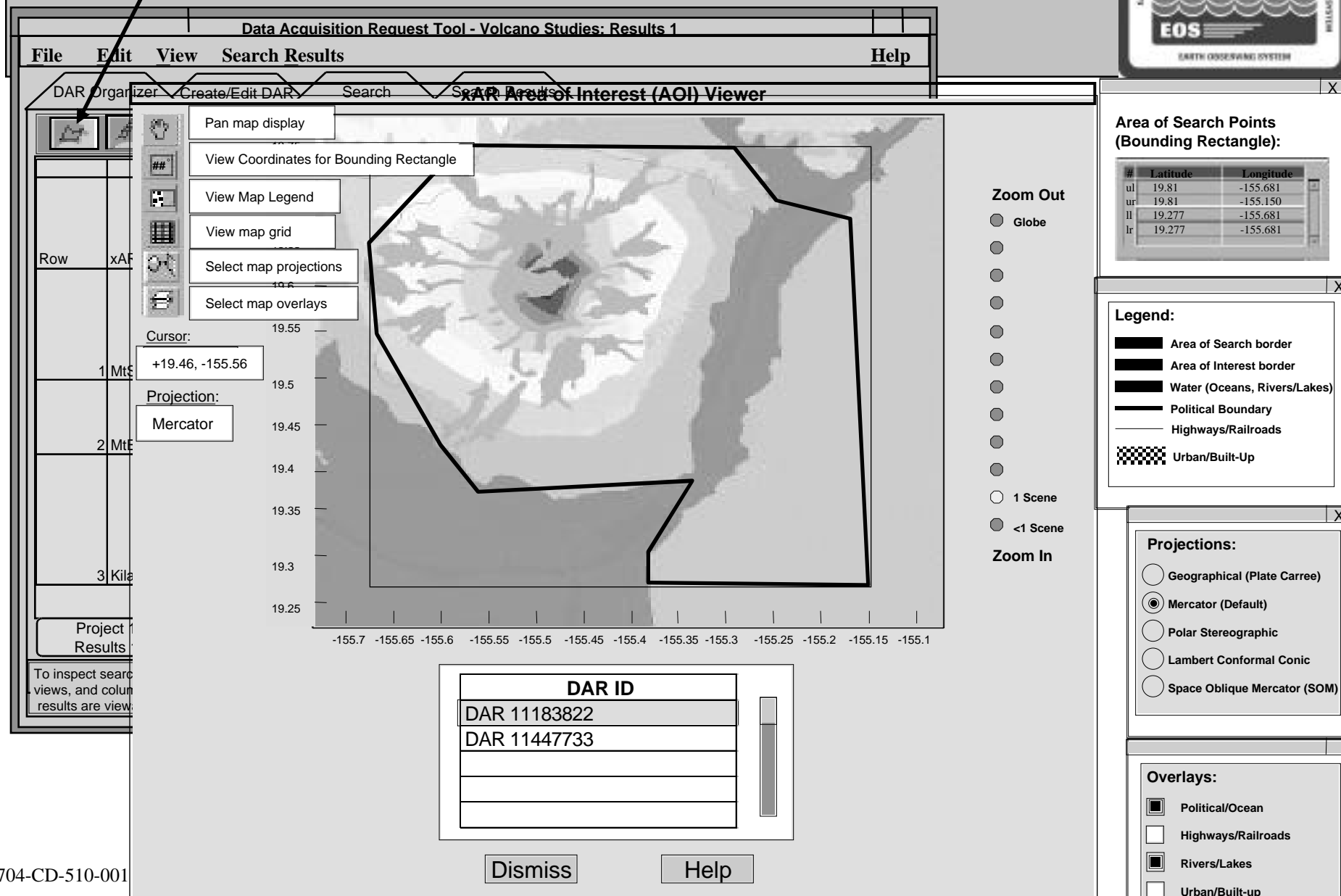
EARTH PROBLEMS

EOS

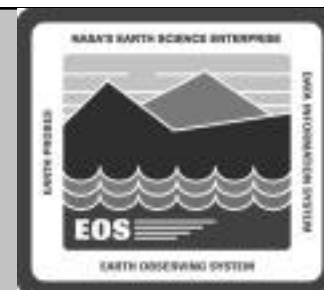
EARTH OBSERVING SYSTEM

GLOBAL MONITORING SYSTEM

Click on 'AOI Viewer' icon to launch DAR AOI Viewer dialog



DAR Observed Scenes Viewer (new)



Pan map display

View Coordinates for Bounding Rectangle

View Map Legend

View map grid

Select map projections

Select map overlays

Cursor: +19.46, -155.56

Projection: Mercator

Cloud Coverage Criterion: 30%

Zoom Out

Globe

Continent

Region

1 Scene

<1 Scene

Zoom In

Scene ID	Scene Status
Scene19837	Product
Scene19558	Product
Scene19761	Failed
Scene19888	Observed
Scene29837	Before Observed
Scene22837	Before Observed

Dismiss
Help

Legend:

- Area of Interest border
- Area of Search border
- Water (Oceans, Rivers/Lakes)
- Political Boundary
- Highways/Railroads
- Urban/Built-Up
- Observation Boundary
- Quadrant Failing
- Cloud Coverage Criteria

Latitude	Longitude
19.81	-155.681
19.81	-155.150
19.277	-155.681
19.277	-155.681

Projections:

- ☐ Geographical (Plate Carree)
- ☒ Mercator (Default)
- ☐ Polar Stereographic
- ☐ Lambert Conformal Conic
- ☐ Space Oblique Mercator (SOM)

Overlays:

- ☒ Political/Ocean
- ☐ Highways/Railroads
- ☒ Rivers/Lakes
- ☐ Urban/Built-up

NASA'S EARTH SCIENCE ENTERPRISE

EARTH PROGRESS

EOS

EARTH OBSERVING SYSTEM

RELEASE INFORMATION 10000

Division No. 19

Operational Impacts



None